

WE CLAIM:

1. An inflatable kayak comprising:
an inflatable peripheral structure defining at least one buoyancy chamber having
5 elongated side sections that come together at a fore section and a aft section to form a
passenger compartment,
an inflatable floor cushion supporting a floor of the passenger compartment, the
floor cushion including a top wall, a bottom wall, and at least one side gusset, wherein
the surface area of the top wall is less than the surface area of the bottom wall, and,
10 a plurality of elongated, I-beam baffles extending between the top wall and the
bottom wall, each I-beam baffle having a midpoint, between the fore section and aft
section, and an end, wherein the height of at least one I-beams baffle measured from the
junction of the top wall to the junction of the bottom wall is greater at the midpoint of
the baffle than at the end of the baffle.
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2. The inflatable kayak of claim 1, wherein the distance between at least two I-
beam baffles along the top wall is less than the distance between the same two I-beam
baffles along the bottom wall.
- 20 3. The inflatable kayak of claim 2, wherein the surface area of the top wall is at
least 5% less than the surface area of the bottom wall.
4. The inflatable kayak of claim 3 wherein the buoyancy chamber of the peripheral
structure includes a first compartment and a second compartment disposed
25 concentrically around the first compartment.
5. The inflatable kayak of claim 4, further comprising a cover of flexible material
that is less elastic than the material of the peripheral structure and floor cushion,
wherein the cover encases the peripheral structure and inflatable floor cushion, forming
30 a substantially inelastic skin against which the peripheral structure and floor cushion can

be inflated to form a structure that is more rigid than the peripheral structure and floor cushion.

6. The inflatable kayak of claim 5, further comprising a shell spanning beneath the passenger compartment and extending along the lower and outer sides of the peripheral structure and cover to further support the floor cushion and protect the tube and cover.

7. The inflatable kayak of claim 6 wherein the shell that spans beneath the passenger compartment comprises a layer of nylon disposed between two layers of PVC.

8. The inflatable kayak of claim 7 including a foldable seat mounted in the passenger compartment.

9. The inflatable kayak of claim 8 including a splash deck of flexible material attached to the cover and extending between the side sections of the tube over the forward portion of the passenger compartment.

10. The inflatable kayak of claim 9, wherein the kayak weighs less than 50 pounds (18.7 kg).

11. The inflatable kayak of claim 10, wherein the kayak is between 6 feet (1.8 m) and 15 feet (4.6 m) long from the fore section to the aft section.

12. The inflatable kayak of claim 1, wherein the floor cushion is between 6 feet (1.8 m) and 9 feet (2.7 m) in length from the fore section to the aft section.

13. The inflatable kayak of claim 4, wherein the first compartment contains fluid that is isolated from the second compartment.

14. The inflatable kayak of claim 1, wherein the plurality of elongated I-beam baffles includes at least 4 I-beam baffles.

15. The inflatable kayak of claim 2, wherein the distance between at least two I-beam baffles along the bottom wall is at least 10% greater than the distance between the two I-beam baffles along the top wall.

16. The inflatable kayak of claim 2, wherein the floor cushion includes a single aperture of inflating the floor cushion.

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17. An inflatable floor cushion comprising:

an inflatable floor cushion including a top wall, a bottom wall, and at least one gusset joining the top wall and bottom wall to define a chamber,

15 a plurality of elongated I-beam baffles within the cushion, each I-beam baffle including a midpoint, between the fore section and aft section, and an end, wherein the distance between at least two I-beam baffles along the top wall is less than the distance between the same two I-beam baffles along the bottom wall.

18. The cushion of claim 17, wherein the surface area of the top wall is at least 5% less than the surface area of the bottom wall.

19. The cushion of claim 18, wherein each I-beam baffle includes a midpoint and an end, wherein the height of at least one I-beam baffle measured from the junction of the top wall to the junction of the bottom wall is greater at the midpoint of the baffle than at the end of the baffle.

20. An inflatable kayak comprising:
an inflatable peripheral structure defining at least one buoyancy chamber having elongated side sections that come together at a fore section and a aft section to form a passenger compartment, wherein the buoyancy chamber of the peripheral structure

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includes a first compartment and a second compartment disposed concentrically around the first compartment,

an inflatable floor cushion, wherein the floor cushion supports a floor of the passenger compartment and includes a top wall, a bottom wall, and at least one side gusset, wherein the surface area of the top wall is at least 5% less than the surface area of the bottom wall,

a plurality of elongated, I-beam baffles extending in the longitudinal direction from the fore section of the kayak to the aft section of the kayak, between the top wall and the bottom wall, each I-beam baffle having a midpoint, between the fore section and aft section, and an end, wherein the height of at least one I-beam baffle measured from the junction of the top wall to the junction of the bottom wall is greater at the midpoint of the baffle than at the end of the baffle, wherein the distance between at least two I-beam baffles along the top wall is less than the distance between the same two I-beam baffles along the bottom wall,

a cover of flexible material that is less elastic than the material of the peripheral structure and floor cushion, wherein the cover encases the peripheral structure and inflatable floor cushion, forming a substantially inelastic skin against which the peripheral structure and floor cushion can be inflated to form a structure that is more rigid than the peripheral structure and floor cushion, and

a shell spanning beneath the passenger compartment and extending along the lower and outer sides of the peripheral structure and cover to further support the floor cushion and protect the tube and cover.